

IN THE CLAIMS:

Cancel Claims 36-40 without prejudice, amend Claims 22, 23 and 27 as follows and add Claims 41- 49:

Claims 1-13. Canceled

14. (Original) A method of forming an osteogenic osteoimplant having not greater than about 32% void volume, the method comprising:

providing a coherent mass of bone particles optionally in combination with one or more biocompatible components, the coherent mass formed at least in part from elongate bone-derived elements optionally in combination with bone powder; and,

mechanically shaping the coherent mass of bone particles to form the osteogenic osteoimplant.

15. (Original) The method of Claim 14 wherein the bone particles are obtained from cortical, cancellous and corticocancellous bone of autogenous, allogenic, xenogenic and transgenic origin.

16. (Original) The method of Claim 14 wherein the biocompatible component is selected from the group consisting of biocompatible fluid carrier, biocompatible binder, filler, fiber, mesh, substance providing radiopacity, plasticizer, biostatic/biocidal agent, surface active agent, and bioactive substance.

17. (Original) The method of Claim 14 which further comprises applying heat to the composition before, during or after mechanically shaping the coherent mass.

18. (Original) The method of Claim 14 which further comprises cross-linking bone particles within the composition before, during or after mechanically shaping the coherent mass.

19. (Original) The method of Claim 14 which further comprises dehydrating the composition before, during or after mechanically shaping the coherent mass.

20. (Original) The method of Claim 17 which further comprises dehydrating the heated, mechanically shaped coherent mass after applying the heat.

21. (Original) The method of Claim 14 wherein the step of mechanically shaping comprises pressing, extruding and/or rolling.

22. (Currently amended) The method of Claim 21 further comprising means for the application of ~~lateral~~ compressive force.

23. (Currently amended) The method of Claim 22 wherein ~~a the~~ compressive and a lateral force ~~is~~ are applied simultaneously.

24. (Original) The method of Claim 14 further comprising the step of placing the coherent mass between two flexible stick-resistant surfaces prior to the step of mechanically shaping.

25. (Original) The method of Claim 14 further comprising the step of placing the coherent mass of bone-derived particles on an inflexible, impermeable, horizontally planar work surface prior to the step of mechanically shaping.

26. (Original) The method of Claim 25 wherein the step of mechanically shaping further comprises contacting the coherent mass with at least one revolving cylindrical roller.

27. (Currently amended) The method of Claim 26 wherein said at least one ~~of the~~ revolving cylindrical roller is modified to provide for the surface treatment of one or both surfaces of the osteoimplant.

28. (Original) The method of Claim 14 further comprising the step of:
occluding a portion of the surface area of the osteoimplant to provide at least one zone of impermeability to soft tissue ingrowth wherein said zone is integral with the osteoimplant.

29. (Original) The method of Claim 28 wherein the occluding step comprises heating a portion of the surface area at elevated temperature.

30. (Original) The method of Claim 28 wherein the occluding step comprises crosslinking bone particles at a portion of the surface area of the mechanically shaped mass.

31. (Original) The method of Claim 14 further comprising the step of shaping the osteoimplant to a determined form, configuration and/or three-dimensional architecture.

32. (Original) The method of Claim 14 further comprising the step of layering and fastening the osteoimplant to form a laminate material.

Claims 33-40. Canceled.

41.(new) The method of Claim 14, comprising the additional step of controlling the coherent mass and mechanical shaping thereof to ensure the thus-formed osteoimplant possesses not greater than about 32% void volume.

42.(new) The method of Claim 41, comprising the additional step of controlling the coherent mass and mechanical shaping thereof to ensure the thus-formed osteoimplant possesses a density greater than about 0.8 g/cm³.

43.(new) The method of Claim 41, comprising the additional step of providing the coherent mass in the form of a flexible sheet comprising elongate bone particles.

44.(new) The method of Claim 43, comprising the additional step of providing the coherent mass with at least about 60% by weight of the elongate bone particles possessing a median length of from about 2 to about 200 mm., a median thickness of from about 0.05 to about 2 mm and a median width of from about 1 mm to about 20 mm with the chosen median length being greater than the chosen median width.

45.(new) The method of Claim 44, wherein at least about 60% by weight of the elongate bone particles possess a median length of from about 10 to about 100 mm, a median thickness of from about 0.2 to about 1 mm and a median width of from about 2 to about 5 mm.

46.(new) The method of Claim 43, comprising the additional step of providing the coherent mass with at least about 60% by weight of the elongate bone particles possessing a median length to median thickness ratio of

from about 50:1 to about 500:1, and a median length to median width ratio of from about 10:1 to about 200:1.

47.(new) The method of Claim 46, wherein at least about 60% by weight of the elongate bone particles possess a median length to median thickness ratio of from about 50:1 to about 100:1, and a median length to median width ratio of from about 50:1 to about 100:1.

48.(new) The method of Claim 43 comprising the additional step of entangling the elongate bone particles to cause them to mechanically adhere to one another.

49.(new) The method of Claim 43, comprising the additional step of shaping the implant as a sheet, plate, disk, tunnel, cone or tube.